

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Transcontinental Gas Pipe Line Corporation
Compressor Station 175
Scottsville, Fluvanna County, Virginia
Permit No. VRO40789

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Transcontinental Gas Pipe Line Corporation has applied for a renewal of a Title V Operating Permit for its natural gas compressor station, located in Scottsville, Fluvanna County, Virginia. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date:_____

Air Permit Manager:_____ Date:_____

Deputy Regional Director:_____ Date:_____

FACILITY INFORMATION

Permittee

Transcontinental Gas Pipe Line Corporation
P.O. Box 1396
Houston, Texas 77251-1396

Facility

Compressor Station 175
Transcontinental Gas Pipe Line Corporation
1344 Transco Road
Scottsville, Virginia 24590

County-Plant Identification Number: 51-065-0016

SOURCE DESCRIPTION

NAICS Code: 048621– Natural Gas Transmission

Transco is an interstate natural gas transmission company. Transco's 1,900-mile pipeline system transports natural gas from production areas in the Gulf Coast region to customers along the eastern seaboard. Transco's compressor stations are used to compress and move the gas along the system. Gas compression at this facility is made possible through the operation of four Cooper-Bessemer LSV-16SG natural gas-fired internal combustion engines and their associated compressors.

The facility is a Title V major source of NO_x, VOC, and CO. This source is located in an attainment area for all pollutants, and is a PSD major source.

CHANGES TO EXISTING TITLE V PERMIT

The renewal Title V permit for Transco's Compressor Station 175 incorporates conditions from the NO_x SIP Call Phase II State Operating Permit issued on 1/30/07. The NO_x SIP Call Rule (63 FR 57356, October 27, 1998 and 69 FR 21604, April 21, 2004), addresses the interstate transport of ozone. It requires twenty-one States and the District of Columbia to eliminate those amounts of NO_x emissions that contribute significantly to downwind nonattainment of the 1-hour ozone standard. EPA estimated the amount of NO_x emissions in a State by 2007 taking into consideration the effect of existing control measures and projected growth. This is known as the 2007 base year emissions inventory. EPA then applied highly cost-effective control measures to

the 2007 base year emissions. This is known as the 2007 budget or controlled inventory. The amount of NO_x emissions that contribute significantly to nonattainment was determined to be the difference between the 2007 base year emissions inventory and the 2007 budget.

In the NO_x SIP Call Phase II Rule (69 FR 21604), the 2007 base year emissions inventory was recalculated to reflect partial State emission for Alabama, Georgia, Michigan, and Missouri and 82 percent control instead of 90 percent control for gas-fired lean burn engines in the stationary internal combustion (IC) engine source category.

Due to the administrative burden associated with the regulatory process and time constraints, Virginia DEQ decided to use an alternative approach to developing the legally enforceable mechanism to implement the EPA requirements for Phase II of the NO_x SIP call. Virginia DEQ imposed the emission limits and other requirements by permit instead of by regulation. This approach was chosen because only internal combustion (IC) engines needed to be regulated as a part of the NO_x SIP Call and there are only a few of those in the state.

An application was received on December 2, 2005 for a State Operating Permit (SOP) for the four existing mainline natural gas-fired reciprocating engines located at Transco's Compressor Station 175. Transco requested a federally-enforceable limit on the compressor engines (M01-M04)(as a whole) that essentially capped NO_x emissions to an ozone season (May 01 – September 30) tonnage limit based on the budget set forth by the NO_x SIP Call Phase II.

Additionally, Transco requested that a condition be added to the permit to make the existing 544-hp four-cycle rich burn auxiliary generator (AUX01 in current permit) operate as an emergency stationary reciprocating internal combustion engine. Therefore, in this permit to be consistent with the application, the unit ID was changed to EMER01 and the generator is referred to as the emergency generator.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

The last full compliance evaluation was conducted on July 31, 2006. On August 16, 2006 a stack test was conducted and reviewed on October 2, 2006 to demonstrate compliance with the NO_x SIP Call requirements in the State Operating Permit dated 1/30/07. The facility is currently in compliance.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
M01	001	Cooper-Bessemer LSV-16SG Internal Combustion Reciprocating Engine, Rated at 4400 Hp. Constructed before 1972.	37 MM Btu/hr	--	--	--	1/30/07**
M02	002	Cooper-Bessemer LSV-16SG Internal Combustion Reciprocating Engine, Rated at 4400 Hp. Constructed before 1972.	37 MM Btu/hr	--	--	--	1/30/07**
M03	003	Cooper-Bessemer LSV-16SG Internal Combustion Reciprocating Engine, Rated at 4400 Hp. Constructed before 1972.	37 MM Btu/hr	--	--	--	1/30/07**
M04	004	Cooper-Bessemer LSV-16SG Internal Combustion Reciprocating Engine, Rated at 4400 Hp. Constructed before 1972.	37 MM Btu/hr	--	--	--	1/30/07**
EMER01	005	Ingersoll Rand PSVG-8 Natural Gas Internal Combustion Reciprocating Emergency Electric Power Generator. Constructed before 1972.	5.5 MM Btu/hr	--	--	--	N/A

**NO_x SIP Call Phase II State Operating Permit

EMISSIONS INVENTORY

A copy of the 2005 annual emission update is attached. Emissions are summarized in the following tables.

Actual emission data is from the annual emission update.

2005 Actual Emissions

Emission Unit	2005 Criteria Pollutant Emissions in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀	NO _x
M01 Engine	0.018	0.05	0.00	0.00	0.49
M02 Engine	0.012	0.03	0.00	0.00	0.33
M03 Engine	0.033	0.09	0.0001	0.00	0.88
M04 Engine	0.008	0.02	0.00	0.00	0.22
EMER01 generator	0.011	1.38	0.0002	0.0035	0.84
IA3 Vulcan space heater	0.03	0.46	0.0033	0.0414	0.55
Total	0.11	2.03	0.0037	0.0450	3.30

The emission units IDs are different in the annual emission update from the permit application. The Units IDs listed above are the IDs found in the application and permit. In the emissions summary, M01-M04 are unit ID M/L 1-M/L 4, EMER01 is unit ID AUX 1, and IA3 is unit ID BLR 1.

As of the date of the Title V Permit renewal application, the source indicates they do not have an accurate method of determining HAP emissions from the facility. Revised AP-42 emission factors for four-stroke lean burn engines were published in July 2000 (Table 3.2-2). Formaldehyde emissions for the facility during 2005 are estimated to be 0.02 tpy based on hours of operation and AP-42 emission factors (Sections 1.4 and 3.2)¹. All other emission factors for HAPs are an order of magnitude smaller than the one for formaldehyde; therefore no HAP emissions are listed for this source type. Existing stationary reciprocating internal combustion engines (RICE) must comply with 40 CFR Part

¹ AP-42 emission factors from Section 1.4 are for the Vulcan space heater (IA3) and AP-42 emission factors from Section 3.2 are for the compressor engines (M01-M04) and the emergency generator (EMER01).

63 Subpart ZZZZ by June 15, 2007. Transco is subject to this subpart. However, per 40 CFR 63.6590.b.3, the four existing spark ignition 4 stroke lean burn stationary RICE and the existing emergency stationary RICE do not have to meet the requirements of Subpart ZZZZ.

2005 Facility Hazardous Air Pollutant Emissions

Pollutant	2005 Hazardous Air Pollutant Emission in Tons/Yr
Formaldehyde	Estimated at 0.02

EMISSION UNIT APPLICABLE REQUIREMENTS - [emission units M01 through M04 and EMER01]

Limitations

The following Virginia Administrative Codes have specific emission requirements that have been determined to be applicable:

9 VAC 5-40-280 B, Article 4, Standard for Sulfur Dioxide

Sulfur dioxide emissions from the operation of the emission units M01-M04 and EMER01 shall not exceed 2.64K pounds per hour per unit, where K equals the actual heat input at total capacity expressed in Btu x 10⁶ per hour.

Calculated SO₂ emission limit per unit: $2.64 \times 37 = 97.7$ pounds SO₂ per hour per unit.
Calculated SO₂ emission limit for the four engines combined: $97.7 \times 4 = 390.7$ pounds SO₂ per hour.

9 VAC 5-40-80 and 9 VAC 5-80-110, Standard for Visible Emissions

In accordance with 9 VAC 5-40-80 and 9 VAC 5-80-110 emission units at this source are limited to 20% stack opacity, except during one six-minute period in any one hour in which visible emissions shall not exceed sixty (60) percent opacity.

9 VAC 5-80-110 B.1, Permit Content

This facility is constructed to burn pipeline quality natural gas only. Inclusion of this condition in accordance with 9 VAC 5-80-110 B.1, along with the fuel consumption records, assures compliance with the SO₂ emission limit in III.A.1.

9 VAC 5-40-20 E and 9 VAC 5-80-110, Compliance

In accordance with 9 VAC 5-40-20 E, at all times, to the extent practicable, the permittee shall maintain and operate the affected facility in a manner consistent with air pollution control practices for minimizing emissions.

Units M01-M04 and EMER01 are subject to 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Although these units are subject by definition, no specific requirements apply. Therefore, only language stating that the units are subject has been included in the permit.

Monitoring

Per 40 CFR Part 64, Compliance Assurance Monitoring (CAM) applies to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:

- (1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant;
- (2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- (3) The unit has the potential pre-control device emissions of the applicable regulated air pollutant that are equal or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source.

Transco does not use a control device to achieve compliance with any emission limitation. Therefore, Transco does not meet the criteria for CAM applicability. Transco is still subject to the periodic monitoring requirements in 40 CFR Part 70 (Title V).

Condition III.A.1 limits SO₂ emissions to the calculated values of 97.7 lbs/hour/unit and 390.7 lbs/hour for the four compressor engines.

Pipeline quality natural gas contains no more than 0.065% wt. sulfur. (20 grain S/(100 scf nat gas) x 1 scf nat gas/0.044 lb nat gas)

The maximum hourly emissions of SO₂ are: 37 mmbtu/hr x 10³ cf/mmbtu x 0.044 lb nat gas/scf nat gas x 0.00065 lb S/lb nat gas x 3 lb SO₂/lb S = 3.15 lbs SO₂/hour

Since the maximum hourly emissions are less than one tenth of the limit, it is highly unlikely that the unit will exceed the hourly SO₂ emission limit. Therefore, periodic monitoring is not required

to demonstrate compliance.

This facility is an existing source, therefore its annual emission limits are its annual potential-to-emit (PTE) at 8760 hours of operation. Additional periodic monitoring is not required to demonstrate compliance.

Opacity periodic monitoring has not been required for the engines (M01-M04) and the generator (EMER01) since the emissions units burn pipeline quality natural gas. Natural gas is a clean burning fuel and produces little or no particulate matter when the engine units are properly maintained and operated.

Recordkeeping

Condition III.B.1 includes requirements for maintaining records. These records include monthly and annual fuel consumption for each emissions unit, hours of use for the emergency generator, and records of malfunctions. The recordkeeping requirement for the emergency generator was added to the permit to track hours of emergency and non-emergency use.

Condition III.B.2 (9 VAC 5-40-20 E) specifies the type of information that may be used to support the permittee's claim that the emission units are properly maintained and operated; there is not an applicable requirement specifying that this information be reported to DEQ. Note the burden of proof is placed on the permittee to demonstrate the engine units are properly operated and maintained. Records must be kept a minimum of five years.

Testing

Condition III.C.1 specifies that the DEQ may request that test ports be provided on exhaust stacks. The Department and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Condition III.C.2 includes a table listing the test methods to be used if emission testing is performed at a later date.

Reporting

Reporting requirements are contained in the General Provisions of the permit.

NO_x SIP CALL PHASE II REQUIREMENTS - [emission units M01 through M04]

The conditions from this section are incorporated from the NO_x SIP Call Phase II State Operating Permit. The owners and operators of the source shall comply with the standard requirements and special provisions set forth in the application. These conditions cap NO_x emissions during ozone season (May 01 - September 30) by setting federally-enforceable limits on the compressor engines (M01-M04). Through these conditions, EPA's requirements for Phase II of the NO_x SIP Call are implemented. A copy of the NO_x SIP Call Phase II State Operating Permit is attached.

Streamlined Requirements

The draft Title V permit contains no streamlined permit conditions.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

The following changes have been made to the existing Title V permit per the updated boilerplate (September 21, 2006):

Permit Modification, Condition J replaced the Permit Action for Cause condition

Malfunction as an Affirmative Defense, Condition U was restructured

Asbestos Requirements, Condition Y was added.

STATE ONLY APPLICABLE REQUIREMENTS

None were identified by the facility.

FUTURE APPLICABLE REQUIREMENTS

The NO_x SIP Call Phase II requirements are effective beginning on May 1, 2007. These requirements are included in Section IV of the draft Title V permit.

INAPPLICABLE REQUIREMENTS

Currently inapplicable requirements identified by the applicant include the following requirements:

40 CFR Part 63, Subpart HH, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Oil and Natural Gas Production is applicable to facilities that process, upgrade, or store (1) hydrocarbon liquids and (2) natural gas from the well up to and including the natural gas processing plant. Transco's Compressor Station 175 does not engage in processing, upgrading, or storage of hydrocarbon liquids. Transco's Compressor Station 175 is compressing and transporting natural gas downstream of any natural gas processing plant. Therefore, Subpart HH is not applicable to Transco's Compressor Station 175.

40 CFR Part 63, Subpart HHH, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Natural Gas Transmission and Storage applies to facilities that process, upgrade, transport, or store natural gas prior to delivery to a local distribution company (LDC) or a final end user if no LDC is present. The standard applies to glycol dehydration units. Transco's Compressor Station 175 does not contain any glycol dehydration units and therefore, the standards of Subpart HHH are not applicable.

40 CFR Part 63, Subpart YYYY, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Combustion Turbines applies to Major HAP facilities with stationary combustion turbines at a rated peak power output of 1MW. Transco's Compressor Station 175 does not operate any turbines and therefore, the standards of Subpart YYYY are not applicable.

40 CFR Part 60, Subpart JJJJ, New Source Review Performance Standards (NSPS) and small source NESHAP for Spark Ignition IC Engines is applicable to new, reconstructed, and modified spark ignition IC engines, regardless of HP rating. Transco's Compressor Station 175 does not have or plan to install new or reconstructed, or modify any existing, spark ignition IC engine and therefore, Subpart JJJ is not applicable.

40 CFR Part 68, Chemical Accident Prevention and Clean Air Act Section 112 (r), Risk Management Plans do not apply to facilities that are regulated by the Department of Transportation (DOT). Transco's Compressor Station 175 is a DOT-regulated facility. Therefore, 40 CFR Part 68 and Section 112(r) of the Clean Air Act do not apply to Transco's Compressor Station 175.

COMPLIANCE PLAN

Transco is currently in compliance with all applicable requirements. The current application, dated July 26, 2006 and received August 3, 2006, contains a compliance certification.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Emission unit IA2, the Waukesha XAH-328C Air Compressor, natural gas-fired has been removed from the list below and from the permit. The air compressor is in the process of being removed from the facility and is currently inoperable.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation ¹	Pollutant Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
IA3	Vulcan VWA-25 Natural Gas-Fired Space Heater	9 VAC 5-80-720 C	N/A	3.2 MM Btu/hr
IA4	Lube Oil Storage Tank	9 VAC 5-80-720 B	VOC	11,600 gal
IA5	Piping Component Fugitive Emissions	9 VAC 5-80-720 B	VOC, HAP	N/A
IA6	Unheated Parts Washer	9 VAC 5-80-720 B	VOC	20 gal
IA7	Accessory Oil Storage Tank	9 VAC 5-80-720 B	VOC	6,000 gal
IA8	Used Oil Storage Tank	9 VAC 5-80-720 B	VOC	3,000 gal
IA9	Natural Gas Condensate Liquids Storage Tank	9 VAC 5-80-720 B	VOC, HAP	2,000 gal
IA10	Portable Natural Gas Condensate Liquids Storage Tank	9 VAC 5-80-720 B	VOC, HAP	367 gal
IA11	Lube Oil Drain & Fill Tank	9 VAC 5-80-720 B	VOC	1,400 gal
IA12	Accessory Oil Drain & Fill Tank	9 VAC 5-80-720 B	VOC	530 gal
IA13	Wastewater Storage Tank	9 VAC 5-80-720 B	VOC	8,820 gal
IA14	Jacket Water (ethylene glycol/water) Drain & Fill Tank	9 VAC 5-80-720 B	VOC, HAP	2,000 gal
IA15	Antifreeze (ethylene glycol) Storage Tank	9 VAC 5-80-720 B	VOC, HAP	2,000 gal

¹The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
- 9 VAC 5-80-720 B - Insignificant due to emission levels
- 9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the Daily Progress from December 5, 2006 to January 3, 2007. EPA will be sent a copy of the draft permit and notified of the public notice on December 1, 2006. All persons on the Title V mailing list will be also sent a copy of the public notice in letters dated December 4, 2006. EPA's 45-day review period will end on January 18, 2007.

ATTACHMENTS

- A. 2005 Annual Emission Update
- B. State Operating Permit issued 1/30/07
- C. Emission Calculations